

Changes that impact multiple portions of the schedule

Removal of MenHibrix (Hib-MenCY)

- The manufacturing of MenHibrix has been discontinued and all doses expired mid-September 2017
- Mention of MenHibrix has been removed from:
 - Figure 1
 - Figure 2
 - Relevant footnotes (Hib and Meningococcal vaccines)

Cover page

Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger, UNITED STATES, 2018

- Consult relevant ACIP statements for detailed recommendations (www.cdc.gov/vaccines/hcp/acip-recs/index.html).
- When a vaccine is not administered at the recommended age, administer at a subsequent visit.
- Use combination vaccines instead of separate injections when appropriate.
- Report clinically significant adverse events to the Vaccine Adverse Event Reporting System (VAERS) online (www.vaers.hhs.gov) or by telephone (800-822-7967).
- Report suspected cases of vaccine-preventable diseases to your state or local health department.
- For information about precautions and contraindications, see www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.

Approved by the

Advisory Committee on Immunization Practices
(www.cdc.gov/vaccines/acip)

American Academy of Pediatrics
(www.aap.org)

American Academy of Family Physicians
(www.aafp.org)

American College of Obstetricians and Gynecologists
(www.acog.org)

This schedule includes recommendations in effect as of January 1, 2018.

The table below shows vaccine acronyms, and brand names for vaccines routinely recommended for children and adolescents. The use of trade names in this immunization schedule is for identification purposes only and does not imply endorsement by the ACIP or CDC.

Vaccine type	Abbreviation	Brand(s)
Diphtheria, tetanus, and acellular pertussis vaccine	DTaP	Daptacel Infanrix
Diphtheria, tetanus vaccine	DT	No Trade Name
<i>Haemophilus influenzae</i> type B vaccine	Hib (PRP-T) Hib (PRP-OMP)	ActHIB Hiberix PedvaxHIB
Hepatitis A vaccine	HepA	Havrix Vaqta
Hepatitis B vaccine	HepB	Engerix-B Recombinax HB
Human papillomavirus vaccine	HPV	Gardasil 9
Influenza vaccine (inactivated)	IIV	Multiple
Measles, mumps, and rubella vaccine	MMR	M-M-R II
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D MenACWY-CRM	Menactra Menveo
Meningococcal serogroup B vaccine	MenB-4C MenB-FHbp	Bexsero Trumenba
Pneumococcal 13-valent conjugate vaccine	PCV13	Prenar 13
Pneumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax
Poliovirus vaccine (inactivated)	IPV	IPOL
Rotavirus vaccines	RV1 RV5	Rotarix RotaTeq
Tetanus, diphtheria, and acellular pertussis vaccine	Tdap	Adacel Boostrix
Tetanus and diphtheria vaccine	Td	Tenivac No Trade Name
Varicella vaccine	VAR	Varivax
Combination Vaccines		
DTaP, hepatitis B and inactivated poliovirus vaccine	DTaP-HepB-IPV	Pediarix
DTaP, inactivated poliovirus and <i>Haemophilus influenzae</i> type B vaccine	DTaP-IPV/Hib	Pentacel
DTaP and inactivated poliovirus vaccine	DTaP-IPV	Knrix Quadracel
Measles, mumps, rubella and varicella vaccines	MMRV	ProQuad



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Figure 1

Routine Immunization Schedule

Figure 1. Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger—United States, 2018.

(FOR THOSE WHO FALL BEHIND OR START LATE, SEE THE CATCH-UP SCHEDULE [FIGURE 2]).

These recommendations must be read with the footnotes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars in Figure 1. To determine minimum intervals between doses, see the catch-up schedule (Figure 2). School entry and adolescent vaccine age groups are shaded in gray.

Vaccine	Birth	1 mo	2 mos	4 mos	6 mos	9 mos	12 mos	15 mos	18 mos	19-23 mos	2-3 yrs	4-6 yrs	7-10 yrs	11-12 yrs	13-15 yrs	16 yrs	17-18 yrs
Hepatitis B ¹ (HepB)	1 st dose	← 2 nd dose →								← 3 rd dose →							
Rotavirus ² (RV) RV1 (2-dose series); RV5 (3-dose series)			1 st dose	2 nd dose	See footnote 2												
Diphtheria, tetanus, & acellular pertussis ² (DTaP: <7 yrs)			1 st dose	2 nd dose	3 rd dose				← 4 th dose →			5 th dose					
Haemophilus influenzae type b ⁴ (Hib)			1 st dose	2 nd dose	See footnote 4				← 3 rd or 4 th dose, See footnote 4 →								
Pneumococcal conjugate ² (PCV13)			1 st dose	2 nd dose	3 rd dose				← 4 th dose →								
Inactivated poliovirus ⁵ (IPV: <18 yrs)			1 st dose	2 nd dose					← 3 rd dose →			4 th dose					
Influenza ⁷ (IV)					Annual vaccination (IV) 1 or 2 doses						Annual vaccination (IV) 1 dose only						
Measles, mumps, rubella ⁸ (MMR)					See footnote 8				← 1 st dose →			2 nd dose					
Varicella ⁹ (VAR)									← 1 st dose →			2 nd dose					
Hepatitis A ¹⁰ (HepA)										← 2-dose series, See footnote 10 →							
Meningococcal ¹¹ (MenACWY-D ≥9 mos; MenACWY-CRM ≥2 mos)			See footnote 11										1 st dose		2 nd dose		
Tetanus, diphtheria, & acellular pertussis ¹² (Tdap: ≥7 yrs)														Tdap			
Human papillomavirus ¹³ (HPV)														See footnote 13			
Meningococcal B ¹¹														See footnote 11			
Pneumococcal polysaccharide ² (PPSV23)												See footnote 5					

Range of recommended ages for all children
Range of recommended ages for catch-up immunization
Range of recommended ages for certain high-risk groups
Range of recommended ages for non-high-risk groups that may receive vaccine, subject to individual clinical decision making
No recommendation

NOTE: The above recommendations must be read along with the footnotes of this schedule.

Figure 2

The Catch-Up Figure

FIGURE 2. Catch-up immunization schedule for persons aged 4 months–18 years who start late or who are more than 1 month behind—United States, 2018.

The figure below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age. Always use this table in conjunction with Figure 1 and the footnotes that follow.

Children age 4 months through 6 years					
Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Hepatitis B ¹	Birth	4 weeks	8 weeks and at least 16 weeks after first dose. Minimum age for the final dose is 24 weeks.		
Rotavirus ²	6 weeks (Maximum age for first dose 14 weeks, 6 days)	4 weeks	4 weeks ² Maximum age for final dose is 8 months, 0 days.		
Diphtheria, tetanus, and acellular pertussis ³	6 weeks	4 weeks	4 weeks	6 months	6 months ³
Haemophilus influenzae type b ⁴	6 weeks	4 weeks if first dose administered before the 1 st birthday; 8 weeks (as final dose for healthy children) if first dose administered at 12 through 23 months of age; No further dose was administered at 24 months or older.	4 weeks if current age is younger than 12 months and previous dose given at <7 months old; 8 weeks (as final dose for healthy children) if previous dose given between 7-11 months (wait until at least 12 months old); OR if current age is 12 months or older and at least 1 dose was given before age 12 months. No further doses needed for healthy children if previous dose administered at age 24 months or older.	4 weeks ² Maximum age for final dose is 8 months, 0 days.	
Pneumococcal ⁵	6 weeks	4 weeks if first dose administered before the 1 st birthday; 8 weeks (as final dose for healthy children) if first dose was administered at the 1 st birthday or after. No further doses needed for healthy children if first dose was administered at age 24 months or older.	4 weeks if current age is younger than 12 months and previous dose given at <7 months old; 8 weeks (as final dose for healthy children) if previous dose given between 7-11 months (wait until at least 12 months old); OR if current age is 12 months or older and at least 1 dose was given before age 12 months. No further doses needed for healthy children if previous dose administered at age 24 months or older.	8 weeks (as final dose) This dose only necessary for children aged 12 through 59 months who received 3 doses before age 12 months or for children at high risk who received 3 doses at any age.	
Inactivated poliovirus ⁶	6 weeks	4 weeks ⁶	4 weeks ⁶ if current age is < 4 years; 6 months (as final dose) if current age is 4 years or older	6 months ⁶ (minimum age 4 years for final dose).	
Measles, mumps, rubella ⁷	12 months	4 weeks			
Varicella ⁸	12 months	3 months			
Hepatitis A ⁹	12 months	6 months			
Meningococcal ¹⁰ (MenACWY-D ≥9 mos; MenACWY-CRM ≥2 mos)	6 weeks	8 weeks ¹⁰	See footnote 11	See footnote 11	
Children and adolescents age 7 through 18 years					
Meningococcal ¹⁰ (MenACWY-D ≥9 mos; MenACWY-CRM ≥2 mos)	Not Applicable (N/A)	8 weeks ¹⁰			
Tetanus, diphtheria, tetanus, diphtheria, and acellular pertussis ³	7 years ¹²	4 weeks	4 weeks if first dose of DTaP/DT was administered before the 1 st birthday; 6 months (as final dose) if first dose of DTaP/DT or Tdap/Td was administered at or after the 1 st birthday. Routine dosing intervals are recommended. ¹²	6 months if first dose of DTaP/DT was administered before the 1 st birthday.	
Human papillomavirus ¹¹	9 years				
Hepatitis A ⁹	N/A	6 months			
Hepatitis B ¹	N/A	4 weeks	8 weeks and at least 16 weeks after first dose.		
Inactivated poliovirus ⁶	N/A	4 weeks	6 months ⁶ A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose.	A fourth dose of IPV is indicated if all previous doses were administered at <4 years or if the third dose was administered <6 months after the second dose.	
Measles, mumps, rubella ⁷	N/A	4 weeks			
Varicella ⁸	N/A	3 months if younger than age 13 years; 4 weeks if age 13 years or older.			

NOTE: The above recommendations must be read along with the footnotes of this schedule.

FIGURE 2. Catch-up immunization schedule for persons aged 4 months–18 years who start late or who are more than 1 month behind—United States, 2018.

The figure below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age. Always use this table in conjunction with Figure 1 and the footnotes that follow.

Children age 4 months through 6 years					
Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Hepatitis B ¹	Birth	4 weeks	8 weeks and at least 16 weeks after first dose. Minimum age for the final dose is 24 weeks.		
Rotavirus ²	6 weeks (Maximum age for first dose 14 weeks, 6 days)	4 weeks	4 weeks ³ Maximum age for final dose is 8 months, 0 days.		
Diphtheria, tetanus, and acellular pertussis ³	6 weeks	4 weeks	4 weeks	6 months	6 months ⁷
Haemophilus influenzae type b ⁴	6 weeks	4 weeks if first dose was administered before the 1 st birthday. 8 weeks (as final dose) if first dose was administered at age 12 through 14 months. No further doses needed if first dose was administered at age 15 months or older.	4 weeks ⁴ if current age is younger than 12 months and first dose was administered at younger than age 7 months, and at least 1 previous dose was PRP-T (ActHib, Pentacel, Hiberix) or unknown. 8 weeks and age 12 through 59 months (as final dose) ⁴ • if current age is younger than 12 months and first dose was administered at age 7 through 11 months; OR • if current age is 12 through 59 months and first dose was administered before the 1 st birthday, and second dose administered at younger than 15 months; OR • if both doses were PRP-OMP (PedvaxHIB; Comvax) and were administered before the 1 st birthday. No further doses needed if previous dose was administered at age 15 months or older.	8 weeks (as final dose) This dose only necessary for children age 12 through 59 months who received 3 doses before the 1 st birthday.	
Pneumococcal ⁵	6 weeks	4 weeks if first dose administered before the 1 st birthday. 8 weeks (as final dose for healthy children) if first dose was administered at the 1 st birthday or after. No further doses needed for healthy children if first dose was administered at age 24 months or older.	4 weeks if current age is younger than 12 months and previous dose given at <7 months old. 8 weeks (as final dose for healthy children) if previous dose given between 7-11 months (wait until at least 12 months old); OR if current age is 12 months or older and at least 1 dose was given before age 12 months. No further doses needed for healthy children if previous dose administered at age 24 months or older.	8 weeks (as final dose) This dose only necessary for children aged 12 through 59 months who received 3 doses before age 12 months or for children at high risk who received 3 doses at any age.	
Inactivated poliovirus ⁶	6 weeks	4 weeks ⁸	4 weeks ⁶ if current age is < 4 years 6 months (as final dose) if current age is 4 years or older	6 months ⁶ (minimum age 4 years for final dose).	
Measles, mumps, rubella ⁹	12 months	4 weeks			
Varicella ⁹	12 months	3 months			
Hepatitis A ¹⁰	12 months	6 months			
Meningococcal ¹¹ (MenACWY-D ≥9 mos; MenACWY-CRM ≥2 mos)	6 weeks	8 weeks ¹¹	See footnote 11		
Children and adolescents age 7 through 18 years					
Meningococcal ¹¹ (MenACWY-D ≥9 mos; MenACWY-CRM ≥2 mos)	Not Applicable (N/A)	8 weeks ¹¹			
Tetanus, diphtheria, tetanus, diphtheria, and acellular pertussis ³	7 years ¹²	4 weeks	4 weeks if first dose of DTaP/DT was administered before the 1 st birthday. 6 months (as final dose) if first dose of DTaP/DT or Tdap/Td was administered at or after the 1 st birthday. Routine dosing intervals are recommended.		
Human papillomavirus ¹³	9 years				
Hepatitis A ¹⁰	N/A	6 months			
Hepatitis B ¹	N/A	4 weeks	8 weeks and at least 16 weeks after first dose.		
Inactivated poliovirus ⁶	N/A	4 weeks	6 months ⁶ A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose.	A fourth dose of IPV is indicated if all previous doses were administered at <4 years or if the third dose was administered <6 months after the second dose.	
Measles, mumps, rubella ⁹	N/A	4 weeks			
Varicella ⁹	N/A	3 months if younger than age 13 years. 4 weeks if age 13 years or older.			

4 weeks⁶ if current age is < 4 years
6 months (as final dose) if current age is 4 years or older

NOTE: The above recommendations must be read along with the footnotes of this schedule.

FIGURE 2. Catch-up immunization schedule for persons aged 4 months–18 years who start late or who are more than 1 month behind—United States, 2018.

The figure below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age. Always use this table in conjunction with Figure 1 and the footnotes that follow.

Children age 4 months through 6 years					
Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Hepatitis B ¹	Birth	4 weeks	8 weeks and at least 16 weeks after first dose. Minimum age for the final dose is 24 weeks.		
Rotavirus ²	6 weeks (Maximum age for first dose 14 weeks, 6 days)	4 weeks	4 weeks ² Maximum age for final dose is 8 months, 0 days.		
Diphtheria, tetanus, and acellular pertussis ³	6 weeks	4 weeks	4 weeks	6 months	6 months ²
Haemophilus influenzae type b ⁴	6 weeks	4 weeks if first dose was administered before the 1 st birthday. 8 weeks (as final dose) if first dose was administered at age 12 through 14 months. No further doses needed if first dose was administered at age 15 months or older.	4 weeks ⁴ if current age is younger than 12 months and first dose was administered at younger than age 7 months, and at least 1 previous dose was PRP-T (ActHib, Pentacel, Hiberix) or unknown. 8 weeks and age 12 through 59 months (as final dose) ⁴ • if current age is younger than 12 months and first dose was administered at age 7 through 11 months; OR • if current age is 12 through 59 months and first dose was administered before the 1 st birthday, and second dose administered at younger than 15 months; OR • if both doses were PRP-OMP (PedvaxHIB; Comvax) and were administered before the 1 st birthday. No further doses needed if previous dose was administered at age 15 months or older.	8 weeks (as final dose) This dose only necessary for children age 12 through 59 months who received 3 doses before the 1 st birthday.	
Pneumococcal ⁵	6 weeks	4 weeks if first dose administered before the 1 st birthday. 8 weeks (as final dose for healthy children) if first dose was administered at the 1 st birthday or after. No further doses needed for healthy children if first dose was administered at age 24 months or older.	4 weeks if current age is younger than 12 months and previous dose given at <7 months old. 8 weeks (as final dose for healthy children) if previous dose given between 7–11 months (wait until at least 12 months old); OR if current age is 12 months or older and No further doses needed for healthy children	8 weeks (as final dose) This dose only necessary for children aged 12 through 59 months who received 3 doses before age 12	
Inactivated poliovirus ⁶	6 weeks	4 weeks ⁶	4 weeks ⁶ if current age is < 4 years 6 months (as final dose) if current age is 4 years or older		
Measles, mumps, rubella ⁷	12 months	4 weeks			
Varicella ⁸	12 months	3 months			
Hepatitis A ⁹	12 months	6 months			
Meningococcal ¹⁰ (MenACWY-D ≥9 mos; MenACWY-CRM ≥2 mos)	6 weeks	8 weeks ¹¹	See footnote 11		
Children and adolescents					
Meningococcal ¹¹ (MenACWY-D ≥9 mos; MenACWY-CRM ≥2 mos)	Not Applicable (N/A)	8 weeks ¹¹			
Tetanus, diphtheria, tetanus, diphtheria, and acellular pertussis ³	7 years ¹²	4 weeks	4 weeks if first dose of DTaP/DT was administered before the 1 st birthday. 6 months (as final dose) if first dose of DTaP/DT or Tdap/Td was administered at or after the 1 st birthday. Alternative dosing intervals are recommended. ¹²	6 months if first dose of DTaP/DT was administered before the 1 st birthday.	
Human papillomavirus ¹³	9 years				
Hepatitis A ⁹	N/A	6 months			
Hepatitis B ¹	N/A	4 weeks	8 weeks and at least 16 weeks after first dose.		
Inactivated poliovirus ⁶	N/A	4 weeks	6 months ⁶ A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose.	A fourth dose of IPV is indicated if all previous doses were administered at <4 years or if the third dose was administered <6 months after the second dose.	
Measles, mumps, rubella ⁷	N/A	4 weeks			
Varicella ⁸	N/A	3 months if younger than age 13 years. 4 weeks if age 13 years or older.			

4 weeks⁶
6 months⁶

A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose.

NOTE: The above recommendations must be read along with the footnotes of this schedule.

FIGURE 2. Catch-up immunization schedule for persons aged 4 months–18 years who start late or who are more than 1 month behind—United States, 2018.

The figure below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age. Always use this table in conjunction with Figure 1 and the footnotes that follow.

Children age 4 months through 6 years					
Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Hepatitis B ¹	Birth	4 weeks	8 weeks and at least 16 weeks after first dose. Minimum age for the final dose is 24 weeks.		
Rotavirus ²	6 weeks (Maximum age for first dose 14 weeks, 6 days)	4 weeks	4 weeks ² Maximum age for final dose is 8 months, 0 days.		
Diphtheria, tetanus, and acellular pertussis ³	6 weeks	4 weeks	4 weeks	6 months	6 months ²
Haemophilus influenzae type b ⁴	6 weeks	4 weeks if first dose was administered before the 1 st birthday. 8 weeks (as final dose) if first dose was administered at age 12 through 14 months. No further doses needed if first dose was administered at age 15 months or older.	4 weeks ⁴ if current age is younger than 12 months and first dose was administered at younger than age 7 months, and at least 1 previous dose was PRP-T (ActHib, Pentacel, Hiberix) or unknown. 8 weeks and age 12 through 59 months (as final dose) ⁴ • if current age is younger than 12 months and first dose was administered at age 7 through 11 months; OR • if current age is 12 through 59 months and first dose was administered before the 1 st birthday, and second dose administered at younger than 15 months; OR • if both doses were PRP-OMP (PedvaxHIB; Comvax) and were administered before the 1 st birthday. No further doses needed if previous dose was administered at age 15 months or older.	8 weeks (as final dose) This dose only necessary for children age 12 through 59 months who received 3 doses before the 1 st birthday.	
Pneumococcal ⁵	6 weeks	4 weeks if first dose administered before the 1 st birthday. 8 weeks (as final dose for healthy children) if first dose was administered at the 1 st birthday or after. No further doses needed for healthy children if first dose was administered at age 24 months or older.	4 weeks if current age is younger than 12 months and previous dose given at <7 months old. 8 weeks (as final dose for healthy children) if previous dose given between 7-11 months (wait until at least 12 months old); OR if current age is 12 months or older and at least 1 dose was given before age 12 months. No further doses needed for healthy children if previous dose administered at age 24 months or older.	8 weeks (as final dose) This dose only necessary for children age 12 through 59 months who received 3 doses before the 1 st birthday.	
Inactivated poliovirus ⁶	6 weeks	4 weeks ⁶	4 weeks ⁶ if current age is < 4 years 6 months (as final dose) if current age is 4 years or older	6 months final dose	
Measles, mumps, rubella ⁷	12 months	4 weeks			
Varicella ⁸	12 months	3 months			
Hepatitis A ⁹	12 months	6 months			
Meningococcal ¹⁰ (MenACWY-D ≥9 mos; MenACWY-CRM ≥2 mos)	6 weeks	8 weeks ¹¹	See footnote 11	See footnote 11	
Children and adolescents age 7 through 18 years					
Meningococcal ¹¹ (MenACWY-D ≥9 mos; MenACWY-CRM ≥2 mos)	Not Applicable (N/A)	8 weeks ¹¹			
Tetanus, diphtheria, tetanus, diphtheria, and acellular pertussis ³	7 years ¹²	4 weeks	4 weeks if first dose of DTaP/DT was administered before the 1 st birthday. 6 months (as final dose) if first dose of DTaP/DT or Tdap/Td was administered at or after the 1 st birthday.	6 months if first dose was administered before birthday.	
Human papillomavirus ¹³	9 years				
Hepatitis A ⁹	N/A	6 months			
Hepatitis B ¹	N/A	4 weeks	8 weeks and at least 16 weeks after first dose.		
Inactivated poliovirus ⁶	N/A	4 weeks	6 months ⁶ A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose.	A fourth dose of IPV is indicated if previous doses were administered at <4 years or if the third dose was administered <6 months after the second dose.	
Measles, mumps, rubella ⁷	N/A	4 weeks			
Varicella ⁸	N/A	3 months if younger than age 13 years. 4 weeks if age 13 years or older.			

6-months⁶
A fourth dose of IPV is indicated if all previous doses were administered at <4 years or if the third dose was administered <6 months after the second dose.

NOTE: The above recommendations must be read along with the footnotes of this schedule.

Figure 3

The High-Risk Figure

Figure 3. Vaccines that might be indicated for children and adolescents aged 18 years or younger based on medical indications

VACCINE ▼	INDICATION ►	Pregnancy	Immunocompromised status (excluding HIV infection)	HIV infection CD4+ count†		Kidney failure, end-stage renal disease, on hemodialysis	Heart disease, chronic lung disease	CSF leaks/cochlear implants	Asplenia and persistent complement component deficiencies	Chronic liver disease	Diabetes
				<15% of total CD4 cell count or <200/mm ³	≥15% of total CD4 cell count or ≥200/mm ³						
Hepatitis B ¹											
Rotavirus ²			SCID*								
Diphtheria, tetanus, & acellular pertussis ³ (DTaP)											
Haemophilus influenzae type b ⁴											
Pneumococcal conjugate ²											
Inactivated poliovirus ⁵											
Influenza ⁷											
Measles, mumps, rubella ⁸											
Varicella ⁹											
Hepatitis A ¹⁰											
Meningococcal ACWY ¹¹											
Tetanus, diphtheria, & acellular pertussis ¹² (Tdap)											
Human papillomavirus ¹³											
Meningococcal B ¹											
Pneumococcal polysaccharide ²											

†For additional information regarding HIV laboratory parameters and use of live vaccines; see the General Best Practice Guidelines for Immunization “Altered Immunocompetence” at: www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html; and Table 4-1 (footnote D) at: www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.

 Vaccination according to the routine schedule recommended
 Recommended for persons with an additional risk factor for which the vaccine should be indicated
 Vaccination is recommended, and additional doses may be necessary based on medical condition. See footnotes.
 No recommendation
 Contraindicated
 Precaution for vaccination

*Severe Combined Immunodeficiency
 †For additional information regarding HIV laboratory parameters and use of live vaccines; see the General Best Practice Guidelines for Immunization “Altered Immunocompetence” at: www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html; and Table 4-1 (footnote D) at: www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.

NOTE: The above recommendations must be read along with the footnotes of this schedule.

Footnotes

Footnote simplification

- Remove unnecessary text while preserving all pertinent information and maintaining clarity
 - Transition from complete sentences to bullets
 - Removal of unnecessary or redundant language
 - Formatting changes

2017 Rotavirus and MMR footnotes

Rotavirus (RV) vaccines. (Minimum age: 6 weeks for both RV1 [Rotarix] and RV5 [RotaTeq])

Routine vaccination:

Administer a series of RV vaccine to all infants as follows:

1. If Rotarix is used, administer a 2-dose series at ages 2 and 4 months.
2. If RotaTeq is used, administer a 3-dose series at ages 2, 4, and 6 months.
3. If any dose in the series was RotaTeq or vaccine product is unknown for any dose in the series, a total of 3 doses of RV vaccine should be administered.

Catch-up vaccination:

- The maximum age for the first dose in the series is 14 weeks, 6 days; vaccination should not be initiated for infants aged 15 weeks, 0 days, or older.
- The maximum age for the final dose in the series is 8 months, 0 days.
- For other catch-up guidance, see Figure 2.

Proposed 2018 Rotavirus and MMR footnotes

Rotavirus vaccines. (minimum age: 6 weeks)

Routine vaccination:

Rotarix: 2-dose series at 2 and 4 months.

RotaTeq: 3-dose series at 2, 4, and 6 months.

If any dose in the series is either RotaTeq or unknown, default to 3-dose series.

Catch-up vaccination:

- Do not start the series on or after age 15 weeks, 0 days.
- The maximum age for the final dose is 8 months, 0 days.
- For other catch-up guidance, see Figure 2.

DRAFT

2017 Hepatitis B (HepB) footnote

Hepatitis B (HepB) vaccine. (Minimum age: birth)

Routine vaccination:

At birth

- Administer monovalent HepB vaccine to all newborns within 24 hours of birth.
- For infants born to hepatitis B surface antigen (HBsAg)-positive mothers, administer HepB vaccine and 0.5 mL of hepatitis B immune globulin (HBIG) within 12 hours of birth. These infants should be tested for HBsAg and antibody to HBsAg (anti-HBs) at age 9 through 12 months (preferably at the next well-child visit) or 1 to 2 months after completion of the HepB series if the series was delayed.
- If mother's HBsAg status is unknown, within 12 hours of birth administer HepB vaccine regardless of birth weight. For infants weighing less than 2,000 grams, administer HBIG in addition to HepB vaccine within 12 hours of birth. Determine mother's HBsAg status as soon as possible and, if mother is HBsAg-positive, also administer HBIG for infants weighing 2,000 grams or more as soon as possible, but no later than age 7 days.

Doses following the birth dose

- The second dose should be administered at age 1 or 2 months. Monovalent HepB vaccine should be used for doses administered before age 6 weeks.
- Infants who did not receive a birth dose should receive 3 doses of a HepB-containing vaccine on a schedule of 0, 1 to 2 months, and 6 months starting as soon as feasible (see Figure 2).
- Administer the second dose 1 to 2 months after the first dose (minimum interval of 4 weeks), administer the third dose at least 8 weeks after the second dose AND at least 16 weeks after the first dose. The final (third or fourth) dose in the HepB vaccine series should be administered no earlier than age 24 weeks.
- Administration of a total of 4 doses of HepB vaccine is permitted when a combination vaccine containing HepB is administered after the birth dose.

Catch-up vaccination:

- Unvaccinated persons should complete a 3-dose series.
- A 2-dose series (doses separated by at least 4 months) of adult formulation Recombivax HB is licensed for use in children aged 11 through 15 years.
- For other catch-up guidance, see Figure 2.

Proposed 2018 Hepatitis B (HepB) footnote

Hepatitis B (HepB) vaccine. (minimum age: birth)

Birth Dose (Monovalent HepB vaccine only):

- **Mother is HBsAg-Negative:** 1 dose within 24 hours of birth for medically stable infants >2,000 grams. Infants <2,000 grams: administer 1 dose at chronological age 1 month or hospital discharge.
- **Mother is HBsAg-Positive:**
 - Give HepB vaccine and 0.5 mL of HBIG (at separate anatomic sites) within 12 hours of birth, regardless of birth weight.
 - Test for HBsAg and anti-HBs at age 9 through 12 months. If HepB series is delayed, test 1-2 months after final dose.
- **Mother's HBsAg status is unknown:**
 - Give HepB vaccine within 12 hours of birth, regardless of birth weight.
 - For infants <2,000 grams, give HBIG in addition to HepB vaccine within 12 hours of birth.
 - Determine mother's HBsAg status as soon as possible. If mother is HBsAg-positive, give HBIG to infants >2,000 grams as soon as possible, but no later than 7 days of age.

Routine Series:

- A complete series is 3 doses at 0, 1-2, and 6 months. (Monovalent HepB vaccine should be used for doses given before age 6 weeks.)
- Infants who did not get a birth dose should begin the series as soon as feasible (see Figure 2).
- Administration of **4 doses** is permitted when a combination vaccine containing HepB is used after the birth dose.
- **Minimum age** for the final (third or fourth) dose: 24 weeks.
- **Minimum Intervals:** Dose 1 to Dose 2: 4 weeks / Dose 2 to Dose 3: 8 weeks / Dose 1 to Dose 3: 16 weeks. (When 4 doses are given, substitute "Dose 4" for "Dose 3" in these calculations.)

Catch-up vaccination:

- Unvaccinated persons should complete a 3-dose series at 0, 1-2, and 6 months.
- Adolescents 11 through 15 years of age may use an alternative 2-dose series, with at least 4 months between doses (adult formulation Recombivax HB only).
- For other catch-up guidance, see Figure 2.

2017 HPV footnote

Human papillomavirus (HPV) vaccine. (Minimum age: 9 years)

Routine and catch-up vaccination:

- Administer a 2-dose series of HPV vaccine on a schedule of 0, 6-12 months to all adolescents aged 11 or 12 years. The vaccination series can start at age 9 years.
- Administer HPV vaccine to all adolescents through age 18 years who were not previously adequately vaccinated. The number of recommended doses is based on age at administration of the first dose.
- For persons initiating vaccination before age 15, the recommended immunization schedule is 2 doses of HPV vaccine at 0, 6-12 months.
- For persons initiating vaccination at age 15 years or older, the recommended immunization schedule is 3 doses of HPV vaccine at 0, 1–2, 6 months.
- A vaccine dose administered at a shorter interval should be readministered at the recommended interval.
 - In a 2-dose schedule of HPV vaccine, the minimum interval is 5 months between the first and second dose. If the second dose is administered at a shorter interval, a third dose should be administered a minimum of 12 weeks after the second dose and a minimum of 5 months after the first dose.
 - In a 3-dose schedule of HPV vaccine, the minimum intervals are 4 weeks between the first and second dose, 12 weeks between the second and third dose, and 5 months between the first and third dose. If a vaccine dose is administered at a shorter interval, it should be readministered after another minimum interval has been met since the most recent dose.
- Persons who have completed an age-appropriate HPV vaccine series (i.e, either 2 or 3 doses of 2vHPV, 4vHPV, or 9vHPV at the recommended intervals) are considered adequately vaccinated.

Special populations:

- For children with history of sexual abuse or assault, administer HPV vaccine beginning at age 9 years.
- Immunocompromised persons* aged 9–26 years, including those with human immunodeficiency virus (HIV) infection, should receive a 3-dose series at 0, 1–2, and 6 months.

Note: HPV vaccination is not recommended during pregnancy, although there is no evidence that the vaccine poses harm. If a woman is found to be pregnant after initiating the vaccination series, no intervention is needed; the remaining vaccine doses should be delayed until after the pregnancy. Pregnancy testing is not needed before HPV vaccination.

*See *MMWR* December 16, 2016;65(49):1405-1408, available at www.cdc.gov/mmwr/volumes/65/wr/pdfs/mm6549a5.pdf.

Proposed 2018 HPV footnote

Human papillomavirus (HPV) vaccine (minimum age: 9 years)

Routine and catch-up vaccination:

- Routine vaccination at 11–12 years (can start at age 9) and through age 18 if not previously adequately vaccinated. Number of doses dependent on age at initial vaccination:
 - Age 9–14 years at initiation: 2-dose series at 0 and 6–12 months. Minimum interval: 5 months (repeat a dose given too soon at least 12 weeks after the invalid dose and at least 5 months after the 1st dose).
 - Age 15 years or older at initiation: 3-dose series at 0, 1–2 months, and 6 months. Minimum intervals: 4 weeks between 1st and 2nd dose; 12 weeks between 2nd and 3rd dose; 5 months between 1st and 3rd dose (repeat dose/s given too soon).
- Persons who have completed a valid series with any HPV vaccine do not need any additional doses.

Special situations:

- **History of sexual abuse or assault:** Begin series at age 9 years.
- **Immunocompromised* (including human immunodeficiency virus [HIV])** aged 9–26 years: 3-dose series at 0, 1–2 months, and 6 months.
- **Pregnancy:** Vaccination not recommended, but there is no evidence the vaccine is harmful and no intervention needed for women who inadvertently received a dose of HPV vaccine while pregnant. Delay remaining doses until after pregnancy. Pregnancy testing not needed before vaccination.

*See *MMWR*, December 16, 2016;65(49):1405–1408, at www.cdc.gov/mmwr/volumes/65/wr/pdfs/mm6549a5.pdf.

Footnoted content edits

Footnotes — Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger, UNITED STATES, 2018

For further guidance on the use of the vaccines mentioned below, see: www.cdc.gov/vaccines/hcp/acip-recs/index.html.

For vaccine recommendations for persons 19 years of age and older, see the Adult Immunization Schedule.

Additional Information

- For information on contraindications and precautions for the use of a vaccine, consult the ACIP General Recommendations on Immunization and the relevant ACIP statement, available online at www.cdc.gov/vaccines/hcp/acip-recs/index.html.
- For calculating intervals between doses, 4 weeks = 28 days. Intervals of ≥ 4 months are determined by calendar months.
- Within a number range (e.g., 12–18), a dash (–) should be read as “through.”
- ACIP does not express a preference for any vaccine product where 1 or more products may be appropriate and considered for use.
- Vaccine doses administered ≤ 4 days before the minimum interval are considered valid. Doses of any vaccine administered ≥ 5 days earlier than the minimum interval or minimum age should not be counted as valid doses and should be repeated as age-appropriate. The repeat dose should be spaced after the invalid dose by the recommended minimum interval. For further details, see Table 3-1, *Recommended and minimum ages and intervals between vaccine doses, in General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html.
- Information on travel vaccine requirements and recommendations is available at wwwnc.cdc.gov/travel/.
- Information on persons with primary and secondary immunodeficiencies, see Table 8-1, *Vaccination of persons with primary and secondary immunodeficiencies, in General Best Practice Guidelines for Immunization*, at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html; and *Immunization in Special Clinical Situations*, (American Academy of Pediatrics). In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. *Red Book: 2015 report of the Committee on Infectious Diseases*. Elk Grove Village, IL: American Academy of Pediatrics, 2015:68–107.
- The Vaccine Injury Compensation Program (VICP) is a no-fault alternative to the traditional legal system for resolving vaccine injury petitions. All vaccines included in the recommended childhood immunization schedule are covered by VICP except for pneumococcal polysaccharide vaccine (PPSV23). For more information; see www.hhs.gov/vaccine-injury/compensation/index.html.

(minimum age: birth)

3 vaccine only):

Give 1 dose within 24 hours of birth to infants >2,000 grams. Administer 1 dose at discharge.

- Infants who did not receive a birth dose should begin the series as soon as feasible (see Figure 2).
- Administration of **4 doses** is permitted when a combination vaccine containing HepB is used after the birth dose.
- Minimum Intervals:** Dose 1 to Dose 2: 4 weeks / Dose 2 to Dose 3: 8 weeks / Dose 1 to Dose 3: 16

Catch-up vaccination:

- Do not start the series on or after age 15 weeks, 0 days.
- The maximum age for the final dose is 8 months, 0 days.
- For other catch-up guidance, see Figure 2.

- Within a number range (e.g., 12–18), a dash (–) should be read as “through.”
- ACIP does not express a preference for any vaccine product where 1 or more products may be appropriate and considered for use

- o Give **HepB vaccine** within 12 hours of birth, regardless of birth weight.
- o For infants <2,000 grams, give **HBIG** in addition to HepB vaccine within 12 hours of birth.
- o Determine mother’s HBsAg status as soon as possible. If mother is HBsAg-positive, give **HBIG** to infants >2,000 grams as soon as possible, but no later than 7 days of age.

Routine Series:

- A complete series is 3 doses at 0, 1–2, and 6 months. (Monovalent HepB vaccine should be used for doses given before age 6 weeks.)

- o **Retrospectively:** A 4th dose that was inadvertently given as early as 12 months may be counted if at least 4 months have elapsed since the 3rd dose.
- o **Retrospectively:** A 4th dose that was inadvertently given as early as 12 months may be counted if at least 4 months have elapsed since the 3rd dose.

2. Rotavirus vaccines. (minimum age: 6 weeks)

Routine vaccination:

Rotarix: 2-dose series at 2 and 4 months.

RotaTeq: 3-dose series at 2, 4, and 6 months.

If any dose in the series is either RotaTeq or unknown, default to 3-dose series.

4. *Haemophilus influenzae* type b (Hib) vaccine. (minimum age: 6 weeks)

Routine vaccination:

- The 5th dose is not necessary if the 4th dose was administered at 4 years or older.
- For other catch-up guidance, see Figure 2.

[4 years for

ns, and 4–6

be given as months have

Footnotes — Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger, UNITED STATES, 2018

For further guidance on the use of the vaccines mentioned below, see: www.cdc.gov/vaccines/hcp/acip-recs/index.html.

For vaccine recommendations for persons 19 years of age and older, see the Adult Immunization Schedule.

Additional Information

- For information on contraindications and precautions for the use of a vaccine, consult the ACIP General Recommendations on Immunization and the relevant ACIP statement, available online at www.cdc.gov/vaccines/hcp/acip-recs/index.html.
- For calculating intervals between doses, 4 weeks = 28 days. Intervals of ≥ 4 months are determined by calendar months.
- Within a number range (e.g., 12–18), a dash (–) should be read as “through.”
- ACIP does not express a preference for any vaccine product where 1 or more products may be appropriate and considered for use.
- Vaccine doses administered ≤ 4 days before the minimum interval are considered valid. Doses of any vaccine administered ≥ 5 days earlier than the minimum interval or minimum age should not be counted as valid doses and should be repeated as age-appropriate. The repeat dose should be spaced after the invalid dose by the recommended minimum interval. For further details, see Table 3-1, *Recommended and minimum ages and intervals between vaccine doses, in General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html.
- Information on travel vaccine requirements and recommendations is available at wwwnc.cdc.gov/travel/.
- For vaccination of persons with primary and secondary immunodeficiencies, see Table 8-1, *Vaccination of persons with primary and secondary immunodeficiencies, in General Best Practice Guidelines for Immunization*, at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html; and *Immunization in Special Clinical Circumstances*, (American Academy of Pediatrics). In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. *Red Book: 2015 report of the Committee on Infectious Diseases, 30th ed.* Elk Grove Village, IL: American Academy of Pediatrics, 2015:68–107.
- The National Vaccine Injury Compensation Program (VICP) is a no-fault alternative to the traditional legal system for resolving vaccine injury petitions. All vaccines within the recommended childhood immunization schedule are covered by VICP except for pneumococcal polysaccharide vaccine (PPSV23). For more information; see www.hrsa.gov/vaccinecompensation/index.html.

1. Hepatitis B (HepB) vaccine. (minimum age: birth)

Birth Dose (Monovalent HepB vaccine only):

- Mother is HBsAg-Negative:** One dose within 24 hours of birth, for medically stable infants $> 2,000$ grams. Infants $< 2,000$ grams administer 1 dose at chronological age 1 month or hospital discharge.
- Mother is HBsAg-Positive:**
 - Give **HepB vaccine** and **0.5 mL of HBIG** (at separate anatomic sites) within 12 hours of birth, regardless of birth weight.
 - Test for HBsAg and anti-HBs at age 9–12 months. If HepB series is delayed, test 1–2 months after final dose.
- Mother’s HBsAg status is unknown:**
 - Give **HepB vaccine** within 12 hours of birth, regardless of birth weight.
 - For infants $< 2,000$ grams, give **HBIG** in addition to HepB vaccine within 12 hours of birth.
 - Determine mother’s HBsAg status as soon as possible. If mother is HBsAg-positive, give **HBIG** to infants $> 2,000$ grams as soon as possible, but no later than 7 days of age.

Routine Series:

- A complete series is 3 doses at 0, 1–2, and 6 months. (Monovalent HepB vaccine should be used for doses given before age 6 weeks.)

- Infants who did not receive a birth dose should begin the series as soon as feasible (see Figure 2).

- Administration of **4 doses** is permitted when a combination vaccine containing HepB is used and a birth dose.

- Minimum age:** Dose 1 to Dose 2: 4 weeks / Dose 2 to Dose 3: 4 weeks / Dose 1 to Dose 3: 16 weeks. (When 4 doses are given, “Dose 4” for “Dose 3” in these calculations.)

- Minimum age:** 24 weeks.

Catch-up vaccination:

- Unvaccinated series at 0, 1–2, and 6 months.

- Adolescents alternative 2–3 (between doses only).

- For other catch-up guidance, see Figure 2.

2. Rotavirus vaccine

Routine vaccination:

Rotarix: 2-dose series at 2 and 4 months.

RotaTeq: 3-dose series at 2, 4, and 6 months.

If any dose in the series is either RotaTeq or unknown, default to 3-dose series.

Catch-up vaccination:

- Do not start the series on or after age 15 weeks, 0 days.
- The maximum age for the final dose is 8 months, 0 days.
- For other catch-up guidance, see Figure 2.

3. DTaP vaccine. (minimum age: 6 weeks [4 years for Kinrix or Quadracel])

1. Hepatitis B (HepB) vaccine. (minimum age: birth)

Birth Dose (Monovalent HepB vaccine only):

- Mother is HBsAg-Negative:** 1 dose within 24 hours of birth for medically stable infants $> 2,000$ grams. Infants $< 2,000$ grams: administer 1 dose at chronological age 1 month or hospital discharge.

4. Haemophilus influenzae type b (Hib) vaccine. (minimum age: 6 weeks)

Routine vaccination:

For further guidance on the use of the vaccines mentioned below, see: www.cdc.gov/vaccines/hcp/acip-recs/index.html

- No history of PPSV23: 1 dose of PPSV23 (at least 8 weeks after any prior PCV13 dose).
- *Incomplete schedules are any schedules where PCV13 doses have not been completed according to ACIP recommended catch-up schedules. The total number and timing of doses for complete PCV13 series are dictated by the age at first vaccination. See Tables 8 and 9 in the ACIP pneumococcal vaccine recommendations (www.cdc.gov/mmwr/pdf/rr/rr5911.pdf) for complete schedule details.

6. Inactivated poliovirus vaccine (IPV). (minimum age: 6 weeks)

Routine vaccination:

- 4-dose series at ages 2, 4, 6–18 months, and 4–6 years. Administer the final dose on or after the 4th birthday and at least 6 months after the previous dose.

Catch-up vaccination:

- In the first 6 months of life, use minimum ages and intervals only for travel to a polio-endemic region or during an outbreak.
- If 4 or more doses were given before the 4th birthday, give one more dose at age 4–6 years and at least 6 months after the previous dose.
- A 4th dose is not necessary if the 3rd dose was given on or after the 4th birthday and at least 6 months after the previous dose.
- IPV is not routinely recommended for U.S. residents 18 and older.

Series Containing Oral Polio Vaccine (OPV), either mixed OPV-IPV or OPV-only series:

- Total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule. See www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.htm?s_cid=mm6601a6_w
- Only trivalent OPV (tOPV) counts toward the U.S. vaccination requirements. For guidance to assess doses documented as “OPV” see www.cdc.gov/mmwr/volumes/66/wr/mm6606a7.htm?s_cid=mm6606a7_w.
- For other catch-up guidance, see Figure 2.

7. Influenza vaccines. (minimum age: 6 months)

Routine vaccination:

- Administer an age-appropriate dose of influenza vaccine:
 - **Children 6 months–17 years:** receive at least 1 dose before July 1 of each year, as indicated by age group.
 - **Persons 18 years and older:** receive at least 1 dose annually.

- Live attenuated influenza vaccine (LAIV) is recommended for persons 5–17 years of age (For the 2018–19 season, see www.cdc.gov/mmwr/volumes/65/rr/rr5911.pdf).

8. Measles, mumps, and rubella (MMR) vaccine. (minimum age: 12 months)

Routine vaccination:

- 2-dose series at 12 months and 4–6 years.
- The 2nd dose may be given as early as 2 months after the 1st dose.

Catch-up vaccination:

- Unvaccinated children should receive the 1st dose at least 4 weeks before international travel.

International travel:

- **Infants 6–11 months:** receive 1 dose before international travel.
- **Children 12 months–17 years:** receive 1 dose before international travel.

9. Varicella (chickenpox) vaccine. (minimum age: 12 months)

Routine vaccination:

- 2-dose series at 12 months and 4–6 years.
- The 2nd dose may be given as early as 3 months after the 1st dose.

Catch-up vaccination:

- **evidence of immunity:** (see www.cdc.gov/mmwr/pdf/rr/rr5911.pdf);
- **Ages 7–12:** receive 1 dose (a dose given after age 12 is not counted).

6. Inactivated poliovirus vaccine (IPV). (minimum age: 6 weeks)
Routine vaccination:

- 4-dose series at ages 2, 4, 6–18 months, and 4–6 years. Administer the final dose on or after the 4th birthday and at least 6 months after the previous dose.

Catch-up vaccination:

- In the first 6 months of life, use minimum ages and intervals only for travel to a polio-endemic region or during an outbreak.
- If 4 or more doses were given before the 4th birthday, give one more dose at age 4–6 years and at least 6 months after the previous dose.
- A 4th dose is not necessary if the 3rd dose was given on or after the 4th birthday and at least 6 months after the previous dose.
- IPV is not routinely recommended for U.S. residents 18 and older.

Series Containing Oral Polio Vaccine (OPV), either mixed OPV-IPV or OPV-only series

- Total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule. See www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.htm?s_cid=mm6601a6_w
- Only trivalent OPV (tOPV) counts toward the U.S. vaccination requirements. For guidance to assess doses documented as “OPV,” see www.cdc.gov/mmwr/volumes/66/wr/mm6606a7.htm?s_cid=mm6606a7_w.
- For other catch-up guidance, see Figure 2

For further guidance on the use of the vaccines mentioned below, see: www.cdc.gov/vaccines/hcp/acip_recommendations/index.html

- No history of PPSV23: 1 dose of PPSV23 (at least 8 weeks after any prior PCV13 dose).
- *Incomplete schedules are any schedules where PCV13 doses have not been completed according to ACIP recommended catch-up schedules. The total number and timing of doses for complete PCV13 series are dictated by the age at first vaccination. See Tables 8 and 9 in the ACIP pneumococcal vaccine recommendations (www.cdc.gov/mmwr/pdf/rr/rr5911.pdf) for complete schedule details.

6. Inactivated poliovirus vaccine (IPV). (minimum age: 6 weeks)

Routine vaccination:

- 4-dose series at ages 2, 4, 6–18 months, and 4–6 years. Administer the final dose on or after the 4th birthday and at least 6 months after the previous dose.

Catch-up vaccination:

- In the first 6 months of life, use minimum ages and intervals only for travel to a polio-endemic region or during an outbreak.
- If 4 or more doses were given before the 4th birthday, give one more dose at age 4–6 years and at least 6 months after the previous dose.
- A 4th dose is not necessary if the 3rd dose was given on or after the 4th birthday and at least 6 months after the previous dose.
- IPV is not routinely recommended for U.S. residents 18 and older.

Series Containing Oral Polio Vaccine (OPV), either mixed OPV-IPV or OPV-only series:

- Total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule. See www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.htm?s_cid=mm6601a6_w
- Only trivalent OPV (tOPV) counts toward the U.S. vaccination requirements. For guidance to assess doses documented as “OPV” see www.cdc.gov/mmwr/volumes/66/wr/mm6606a7.htm?s_cid=mm6606a7_w.
- For other catch-up guidance, see Figure 2.

7. Influenza vaccines. (minimum age: 6 months)

Routine vaccination:

- Administer an age-appropriate dose of influenza vaccine:
 - **Children 6 months–17 years:** receive at least 1 dose before July 1 of each year, as determined by age-appropriate influenza vaccine.
 - **Persons 18 years and older:** receive at least 1 dose before July 1 of each year, as determined by age-appropriate influenza vaccine.

- Live attenuated influenza vaccine (LAIV) is recommended for healthy, non-pregnant persons aged 5–49 years.
- For additional guidance on influenza vaccine, see www.cdc.gov/mmwr/volumes/65/rr/rr6508a1.pdf (For the 2018–19 season, see www.cdc.gov/mmwr/volumes/67/rr/rr6708a1.pdf).

8. Measles, mumps, and rubella (MMR) vaccine. (minimum age: 12 months)

Routine vaccination:

- 2-dose series at 12–15 months and 4–6 years.
- The 2nd dose may be given as early as 4 weeks after the 1st dose.

Catch-up vaccination:

- Unvaccinated children and adolescents: 2 doses at least 4 weeks apart.

International travel:

- **Infants 6–11 months:** 1 dose before departure. Revaccinate with 2 doses at 12–15 months (12 months for children in high-risk areas) and 2nd dose at least 4 weeks later.

Persons at risk to due to a mumps outbreak:

- **Previously vaccinated persons identified as being at risk should receive a 3rd dose of MMR vaccine**

9. Varicella (chickenpox) vaccine. (minimum age: 12 months)

Routine vaccination:

- 2-dose series at 12–15 months and 4–6 years.
- The 2nd dose may be given as early as 4 weeks after the 1st dose.

Catch-up vaccination:

- **Unvaccinated children and adolescents:** 2 doses at least 4 weeks apart.

International travel:

- **Infants 6–11 months:** 1 dose before departure. Revaccinate with 2 doses at 12–15 months (12 months for children in high-risk areas) and 2nd dose at least 4 weeks later.

8. Measles, mumps, and rubella (MMR) vaccine. (minimum age: 12 months for routine vaccination)

Routine vaccination:

- 2-dose series at 12–15 months and 4–6 years.
- The 2nd dose may be given as early as 4 weeks after the 1st dose.

Catch-up vaccination:

- Unvaccinated children and adolescents: 2 doses at least 4 weeks apart.

International travel:

- **Infants 6–11 months:** 1 dose before departure. Revaccinate with 2 doses at 12–15 months (12 months for children in high-risk areas) and 2nd dose at least 4 weeks later.
- **Children 12 months and older:** 2 doses at least 4 weeks apart before departure.

Persons at risk to due to a mumps outbreak:

- **Previously vaccinated persons identified as being at risk should receive a 3rd dose of MMR vaccine**

For further guidance on the use of the vaccines mentioned below, see: www.cdc.gov/vaccines/hcp/acip-recs/index.html.

- No history of PPSV23: 1 dose of PPSV23 (at least 8 weeks after any prior PCV13 dose).
 - *Incomplete schedules are any schedules where PCV13 doses have not been completed according to ACIP recommended catch-up schedules. The total number and timing of doses for complete PCV13 series are dictated by the age at first vaccination. See Tables 8 and 9 in the ACIP pneumococcal vaccine recommendations (www.cdc.gov/mmwr/pdf/rr/rr5911.pdf) for complete schedule details.
6. **Inactivated poliovirus vaccine (IPV).** (minimum age: 6 weeks)
- Routine vaccination:**
- 4-dose series at ages 2, 4, 6–18 months, and 4–6 years. Administer the final dose on or after the 4th birthday and at least 6 months after the previous dose.
- Catch-up vaccination:**
- In the first 6 months of life, use minimum ages and intervals only for travel to a polio-endemic region or during an outbreak.
 - If 4 or more doses were given before the 4th birthday, give one more dose at age 4–6 years and at least 6 months after the previous dose.
 - A 4th dose is not necessary if the 3rd dose was given on or after the 4th birthday and at least 6 months after the previous dose.
 - IPV is not routinely recommended for U.S. residents 18 and older.
- Series Containing Oral Polio Vaccine (OPV), either mixed OPV-IPV or OPV-only series:**
- Total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule. See www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.htm?s_cid=mm6601a6_w
 - Only trivalent OPV (tOPV) counts toward the U.S. vaccination requirements. For guidance to assess doses documented as “OPV” see www.cdc.gov/mmwr/volumes/66/wr/mm6606a7.htm?s_cid=mm6606a7_w.
 - For other catch-up guidance, see Figure 2.
7. **Influenza vaccines.** (minimum age: 6 months)
- Routine vaccination:**
- Administer an age-appropriate formulation and dose of influenza vaccine annually.
 - **Children 6 months–8 years** who did not receive at least 2 doses of influenza vaccine before July 1, 2018, should receive 2 doses separated by at least 4 weeks.
 - **Persons 9 years and older** 1 dose
 - Live attenuated influenza vaccine (LAIV) not recommended for the 2017–18 season.
 - For additional guidance, see the 2017–18 ACIP influenza vaccine recommendations (MMWR August 26, 2016;65(5):1-54: www.cdc.gov/mmwr/volumes/65/rr/pdfs/rr6505.pdf).
- (For the 2018–19 season, see the 2018–19 ACIP influenza vaccine recommendations.)
8. **Measles, mumps, and rubella (MMR) vaccine.** (minimum age: 12 months for routine vaccination)
- Routine vaccination:**
- 2-dose series at 12–15 months and 4–6 years
 - The 2nd dose may be given as early as 4 months after the 1st dose.
- Catch-up vaccination:**
- Unvaccinated children and adolescents: 2 doses, separated by at least 4 weeks apart.
- International travel:**
- **Infants 6–11 months:** 1 dose at 6–11 months. Revaccinate with 2 doses at 12–15 months for children and 4–6 years for adolescents.
 - **Children 12 months and older:** 1 dose at least 4 weeks before departure.
9. **Varicella (VAR) vaccine.** (minimum age: 12 months)
- Routine vaccination:**
- 2-dose series: 12–15 months and 4–6 years
 - The 2nd dose may be given as early as 4 months after the 1st dose (a 3-month interval may be considered for children with evidence of immunity).
- Catch-up vaccination:**
- **Evidence of immunity:** (a blood test for varicella-specific IgG antibody):
 - **Ages 7–12:** recommended (1 dose given after age 12 counted).
10. **Hepatitis A (HepA) vaccine.** (minimum age: 12 months)
- Routine vaccination:**
- 2 doses, separated by 6–18 months, between the 1st and 2nd birthdays. (A series begun before the 2nd birthday should be completed even if the child turns 2 before the second dose is given.)
- Catch-up vaccination:**
- Anyone 2 years of age or older may receive HepA vaccine if desired. Minimum interval between doses is 6 months.
- Special populations: Previously unvaccinated persons who should be vaccinated:**
- Persons traveling to or working in countries with high or intermediate endemicity
 - Men who have sex with men
 - Users of injection and non-injection drugs
 - Persons who work with HAV in a research laboratory or with non-human primates
 - Persons with clotting-factor disorders
 - Persons who anticipate close, personal contact (household or regular babysitting) with an international adoptee during the first 60 days

Discussion and Vote

- Does ACIP approve of the proposed edits to the child/adolescent schedule (including the simplified footnotes)?